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EXECUTIVE SUMMARY OF THE NATIONAL COMMUNICATION OF THE

REPUBLIC OF ESTONIA

submitted under Articles 4 and 12 of the
United Nations Framework Convention on Climate Change

In accordance with decision 9/2 of the Intergovernmental Negotiating Committee of the Framework Convention on Climate Change (INC/FCCC) and endorsed by the Conference of the Parties in its decision 3/CP.1 (FCCC/CP/1995/7/Add.1), the secretariat is to make available, in the official languages of the United Nations, the executive summaries of the national communications submitted by Annex I Parties.

Note: Executive summaries of national communications issued prior to the first session of the Conference of the Parties bear the symbol A/AC.237/NC/___.

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Copies of the national communication of the Republic of Estonia may be obtained from the following:

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INTRODUCTION

1. Estonia is situated in the north-western part of the flat East European plain, remaining entirely within the drainage area of the Baltic Sea (see figure 1 on page 4 of the communication). The coastline length is 3,794 km. The country is located between 57.30 and 59.49 degrees latitude and 21.46 and 28.13 degrees longitude. The total area of Estonia is 45,215 km^2, of which 4,132 km^2 (9.2 per cent) is made up of more than 1,500 islands and islets. 19,200 km^2 (42-43 per cent of total land area) of the Estonian territory is made up of productive forest land. The Estonian forests belong to the zone of mixed and coniferous forests with relatively favourable growth conditions. Forests with conifers as dominant tree species make up 63 per cent of the total area of the Estonian forests and 66 per cent of the total forest yield; forests with deciduous trees as dominant species constitute 37 per cent of the forested area and 34 per cent of the forest yield. The peatland area is approximately 10,000 km^2, corresponding to 22 per cent of the territory (partly coinciding with forest areas).

2. Estonia is characterised by a flat topography. The average elevation is 50 m, with the highest point being 318 m above sea level. The country can be divided into two regions: Lower Estonia and Upper Estonia. Upper Estonia comprises the more elevated areas in the central and southern parts of country, which were not covered by the sea during the Holocene. The soils of Upper Estonia are more fertile and the rural population is denser than in Lower Estonia. Of the total population of 1,574,955 (1990 census), 71.4 per cent live in urban areas. The population density is 35/km^2. 51 per cent of the population live in five largest cities (Tallinn 484,400, Tartu 115,400, Narva 82,300, Kohtla-Järve 76,800 and Pärnu 54,200).

3. Estonia belongs to the Atlantic continental region of the temperate zone, which is characterized by rather warm summers and comparatively mild winters. Since the annual amount of precipitation is approximately double that of evaporation, the climate is excessively damp. The amount of solar radiation varies widely during the year. The length of a summer day is three times longer that of a winter day in northern Estonia. The height of the sun reaches 55°C at the summer solstice and only 8°C at the winter solstice.

4. Although not very large in area, Estonia is relatively rich in natural resources, both mineral and biological, which have been and will be the basis of the Estonian economy. The production and processing of mineral resources provide a considerable share of the gross national product (see table 1 below).

Table 1. Active deposits of Estonian mineral resources (Paalme, 1992)

Resource		
Oil shale	3,800	million tons
Phosphorite	260	million tons
Limestone, dolomite	300	million m^3
Sand, gravel	180	million tons
Peat	560	million tons
Lake mud	120	million tons
Curative mud	4	million tons

5. Serious environmental problems are caused by the industrial use of these resources. One of the most important is connected with the excavation of oil shale, which is accompanied by a decline of ground water table, degradation of the quality of the fields and forests, as well as direct reduction of useful land due to the subsidence of soil and the deposition of waste. The area rendered useless by excavation and industrial activity is at least 450 km^2, which comprises about 1 per cent of Estonian territory. The restoration of land for recreation or for the development of industry helps to reduce the negative side effects of the excavated areas. Waste materials of oil shale mining and processing cover thousands of hectares; there are waste heaps with relative heights exceeding 100 m. Those terricones contain a number of compounds emitting or easily washed out with atmospheric precipitations.

6. The most important branch of industry in Estonia is energy. The total power yield of the Estonia and Baltic Thermal Power Plant is about 3,000 MW. About half of the energy produced in 1990 was exported to Russia and Latvia. Approximately 75 per cent of pollutants (CO_2, SO_2, NO_x, fly-ash) is emitted by the Baltic and Estonian TPP, which ranks among the ten biggest sources of air pollution in Europe.

7. The centre of the chemical industry is in the north-eastern part of Estonia, the biggest enterprises being the Kiviõli Oil Shale Chemical Plants and the Kohtla-Järve Oil Shale Processing Association. The chemical industry has been mainly developed on the basis of oil shale and other imported raw materials (natural gas, apatite) for the production of fuel oil, aromatic hydrocarbons, phenols, solvents, cosmetics and pesticides. Estonian agriculture has specialized in livestock breeding of which cattle-breeding is the most important. Loop production yields about one third of the gross agricultural product -- as at 1 January 1990, the overwhelming majority of arable land belonged to collective and state farms. Since then the large farms began to break into private farms and there is now a transitional period of full restructuring of agriculture.

Energy and Industry

8. Estonia does not have any major source of fossil fuels such as oil, coal or natural gas, apart from deposits of oil shale and a substantial part of the fuel used must therefore be imported. The Estonian's energy policy is now focused on reducing fuel imports and increasing the efficiency of energy use.

9. Energy-related activities are the most significant contributors to Estonian greenhouse gas emissions. Emissions from fossil fuel combustion comprise the vast majority of these energy-related emissions with releases of CO_2 from fossil fuel combustion. Activities associated with the production, transmission, storage and distribution of fossil fuels also emit greenhouse gases. These are primary fugitive emissions from natural gas systems, oil shale oil production and oil shale mining. The main gas emitted through these activities is methane, while smaller quantities of NMVOCs, CO_2 and CO can also be emitted. These gases represent a much smaller portion of total energy emissions than CO_2.

10. In 1990 Estonian energy system consumed in total 452000 TJ of fuel. Estonia satisfies most of its energy demand by using fossil fuels. In 1990 oil shale constituted 52.8 per cent of the energy balance (see figure 2 on page 7 of the communication). The share of oil shale in the Estonian energy balance is high, because it is used as a fuel in four oil shale fired power plants. During oil shale combustion CO_2 is formed not only as a burning product of organic carbon, but also as a decomposition product of carbonate part. From 1990 to 1993, electricity production has decreased considerably due to economic depression. It amounted to a decrease in oil shale consumption for electricity generation from 22.4 million tons in 1990 to 15 million tons in 1993. At the same time emissions from transport increased according to the increasing number of transport vehicles. A lot of used old cars and lorries are imported from abroad. Therefore the total emissions from transport vehicles shows continual increasing tendency.

Basic trends in energy policy of the Republic of Estonia

11. Energy policy is proceeding from the general economic policy of the state, interests of consumers and energy companies and environment requirements. An objective is set forth to guarantee the needs of the state in fuel, heat and electric energy at minimum cost and expense, thereby taking into consideration technical, economic and social conditions and environmental requirements.

Forestry

12. Usually the data of 1990, 1991 and 1992 years are used for the estimation of carbon fluxes from Estonian forestry. Current emissions of CO_2 from biomass left to decay are estimated over the previous decade (1980-1990). The tracking of soil carbon, as well as

carbon in product pools, has also been included. Current releases of carbon from soils due to conversions are estimated over the previous 25 years (1965-1990). Immediate release from the burning, delayed release from decay and long-term loss of soil carbon have been used as average data over the period shown before and calculated per year.

13. The availability of data needed, their statistics and confidence in enterprises of the Estonian forestry have been satisfied. There is a consistent and arranged accounting in forestry. The data on fuelwood includes the figures of official fellings, but not of private fellings in the countryside (percentage is insignificant). The data on the wood used in heating are therefore a little doubtful.

14. In 1988 Estonian forests consisted of premature and mature stands (17 per cent), middle-aged stands (53 per cent), and young stands (30 per cent). In exploitable profitable spruce, pine and birch forests young stands are respectively 1-40, 1-40 and 1-20 years old, middle age 41-60, 41-80 and 21-50, premature and mature stands 61, 81 and 51 years old (Karoles *et al.*, 1994).

15. Despite the small area of the territory of Estonia, the growing forests are rather diverse. The great variability brought about by natural conditions (parent material of soil, relief, climatic differences) is in its turn increased by the circumstance that the majority of the forests of Estonia have been affected by man's activities in various degrees and ways (cutting, drainage, fires, etc.).

Agriculture

16. Territory of arable land in Estonia in 1991 was 1,130,000 hectares; the total sown area is 1,110,000 hectares.

17. Estonian agriculture has specialized in livestock breeding. Until the late 1980s, livestock breeding depended largely on fodder imported from the other parts of the former USSR. In consequence, a large amount of milk and meat produced in Estonia was exported to other parts of the Soviet Union. Agriculture chiefly depended on the functioning of collective farms and state farms at that time. Towards the end of the 1980s, the farms began to break into smaller units, and private farms and family farms were established or re-established.

18. In Estonia by 1 January 1991 there were 1,132,000 hectares of arable land, that is, 25 per cent of the territory. At the same time, there are 312,000 hectares of natural grassland and 1,920,000 hectares of forest and woodland (see table 2 below).

19. The total area of sown land in 1991 was 1.11 million hectares. 55.9 per cent of that were under annual and perennial hay; 37.5 per cent -- under cereals and 6.3 per cent -- under potatoes, fodder crops and vegetables. Industrial crops were grown on 3,011 hectares (see figure 3 on page 9 of the communication).

20. The total amount of mineral fertilizers used in collective farms and state farms was 195,200 tons, including 69,800 tons of nitrogen fertilizers. Organic fertilizers were used on an average 7.0 tons per 1 hectare of sown land. To add the amount of fertilizers used in private farms approximately 125,200 tons of nitrogen was put into the soil with fertilizers, from which 70 per cent was nitrogen in the form of mineral fertilizers.

21. The total yield of cereals and legumes amounted to 939.4 thousand tons, of which the yield of barley comprised 66.3 per cent. By 1 January 1991, there were 757.7 thousand cattle, including 280.7 thousand cows. There were also 959.9 thousand pigs, 139.0 thousand sheep and 8.6 thousand horses in the country.

22. In 1991, 177.1 thousand tons of meat, 1092.8 thousand tons of milk and 559.7 million eggs were produced.

23. In the following years landstock of private farms increased by 3.4 times due to farm reconstructions.

24. At the same time the level of agricultural production throughout the country decreased. This can be explained by economic factors. The cost of fertilizers, machinery, and fuel has become higher, but the prices of agricultural products are relatively low. Hence, the profitability of agricultural production is low. Moreover, land legislation is not working out well and remains the most important obstacle to the development of agriculture.

Table 2. Landstock in Estonia

Item	1991 1000 hectares	1992 1000 hectares	1993 1000 hectares
Total landstock	4522.6	4522.6	4522.6
Arable land	1131.9	1131.9	1127.6
gardens	14.9	14.8	14.9
natural grassland	311.6	311.5	312.5
forest and woodland	1920.1	2015.6	2021.8
inland water	283.3	283.3	283.3
Agricultural producers	2538.3	2545.3	2549.1
arable land	1110.7	1111.0	1111.4
gardens	12.7	12.7	12.7
natural grassland	244.3	244.9	244.7
forest and woodland	712.4	814.7	817.9
inland water	55.1	55.3	55.4
Inc. in private farms	62.1	176.7	213.9
arable land	25.6	75.9	91.8
gardens	0.3	0.9	1.1
natural grassland	8.4	19.7	23.0
forest and woodland	18.5	56.9	70.5
inland water	1.1	3.2	3.8

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EXECUTIVE SUMMARY OF THE NATIONAL COMMUNICATION OF

POLAND

submitted under Articles 4 and 12 of the
United Nations Framework Convention on Climate Change

In accordance with decision 9/2 of the Intergovernmental Negotiating Committee of the Framework Convention on Climate Change (INC/FCCC) and endorsed by the Conference of the Parties in its decision 3/CP.1 (FCCC/CP/1995/7/Add.1), the secretariat is to make available, in the official languages of the United Nations, the executive summaries of the national communications submitted by Annex I Parties.

Note: Executive summaries of national communications issued prior to the first session of the Conference of the Parties bear the symbol A/AC.237/NC/___.

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Copies of the national communication of Poland may be obtained from the following:

**Ministry of Environmental Protection,
Natural Resources and Forestry
Department of Air and Land Protection
Warszawa, Wawelska 52/54
Fax No. (48 22) 25 20 03**

This document has been submitted without formal editing.

The aim of the report

1. The aim of this report is to present to the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), according to Article 12, paragraphs 1 and 2, the policy of the Polish Government implemented in actions leading to the fulfilment of obligations the Convention.

2. The report covers the inventory of the greenhouse gases emission sources and sinks in Poland, in the base year 1988, the assessed emission of the greenhouses gases for the year 2000, information on the actions planned and undertaken that aim to limit the emission and to increase sinks of these gases and on the possibilities to adapt Polish economy to changed climatic conditions.

Poland's commitments of the Convention

3. The ratification of the Convention put upon the Annex I Parties commitments to stabilize the greenhouse gases emission by the year 2000 on the level of 1990. The consequence of this obligation is the preparation and the implementation of the national programme of actions aimed to achieve this goal.

4. Article 4, paragraph 6, of the Convention allows countries with economies in transition a certain flexibility in the implementation of the commitments under the Convention. Taking into account the above, the Polish Government acknowledges the right of Poland to accept the year 1988 as reference year for the implementation of the commitments to the United Nations Framework Convention on Climate Change instead of the year 1990 provided by the Convention; and moreover, to the partial implementation of the commitments concerning the greenhouse gases emission stabilisation.

The Polish economy specific features

5. In the Polish economy the main primary energy source is coal, and its consumption in the base year was 76.5 per cent. In 1992, this decreased to 75.3 per cent, with the increased use of oil and natural gas.

6. Polish industry is dominated by the raw material industries with relatively high participation of low processed products, with high energy and raw materials consumption, and the low rate of production renewal. The industry has a decisive role in the generation of the gross national product (GNP), but the data for 1992 shows that there is a tendency for its reduction.

7. In 1989 Poland entered the path of thorough structural and economic change. The Government priorities are mainly focused on the country's economy modernization and restructuring, with proper account given to such problems as privatisation, unemployment, social protection for the impoverished groups of the society, etc.

8. The main aim of the Polish economy for the coming decades is to realize complex reforms in all sectors to lower the energy and raw materials consumption, which should help in the implementation of the sustainable development principles. In the economy it is expressed in the tendency for such a conduct of economic activities, that with minimum use of the non-renewable resources (energy and raw materials) and with minimum environmental impact, the products achieved would be of a proper value, with a substantial role of improved technological know-how.

9. The efficiency of further actions is highly dependent on the success of the social and economic reforms programme initiated in 1999. Due to the direct impact of the greenhouse gases reduction actions on the state of the economy, the implementation of the commitments of the Convention will depend on the success of the reforms programme.

The ecological policy goals in the field of greenhouse gases

10. Taking into account the above-mentioned social and economic priorities of Poland it is understandable that the problem of greenhouse gases emission reduction taken separately is not a priority goal. However, the need to ensure the economic competitiveness and the efficient use of fossil fuels bring about the situation when realised actions allow to reduce the greenhouse gases emission (particularly carbon dioxide).

11. This goal should be achieved with market economy mechanisms, such as price changes to world's market prices levels, cessation of the subsidies for the majority of the economic sectors, financial support for the industrial plants modernisation, etc.

12. The limitation of carbon dioxide emissions to the level agreed in the international forum is one of the long term goals of the State Environment Policy approved by the Parliament (Sejm) of the Republic of Poland in 1991.

The greenhouse gases inventory for the year 1988

13. The inventory of greenhouse gases of anthropogenic emissions and sinks in Poland shows that emissions (in Gg) of these gases in 1988 were:

- carbon dioxide (CO_2) - 483 700
- methane (CH_4) - 6 060
- nitrous oxide (N_2O) - 73

- nitrogen oxides (NO_x,) - 600
- carbon oxide (CO) - 2 730
- non-methane volatile organic compounds NMVOCs - over 352

14. The values given above are valid for the base year and are the reference level for the assessment of Poland's implementation of the Convention commitments fulfilment.

15. Carbon dioxide retention in agriculture amounted to 11 750 Gg, and in forests 18 280.

The actions aimed at the greenhouse gas emissions reduction undertaken since 1988

16. The comparison of the 1988, 1990 and 1992 inventories indicates that the emissions of the most important greenhouse gases has a decreasing tendency. The permanence of tendency for the carbon dioxide emission decrease is proven by the fact that in spite of the GNP growth in 1992 a further emission decrease is noted.

17. This is due to the lowering energy consumption in the whole economy. The greenhouse gases emission reduction is caused not only by the economic recession resulting in reduced production and the decrease of the primary energy demand, but also by the economic reform forcing the actions, propitious for the greenhouse gases emission limitation. An example of such action is the large-scale activities aimed to eliminate the use of coal in small boiler-houses, in households and small production plants and to replace it with another energy carrier like gas or fuel oil. The inventories of such actions made in several areas of the country show that they resulted in the reduction of carbon dioxide by about 6500 Gg during the years 1989-1993.

18. Actions are also undertaken to increase the carbon dioxide absorption by forests, by increased forestation. Since 1988 till 1993 the forested area has increased by about 60 000 hectares.

Strategies and directions of the actions adopted by the Government in the field of the greenhouse gas emissions reduction

19. The main goals of the Polish economy are laid down in the document "The Strategy for Poland 1995-1997", approved by the Government and by the Parliament of the Republic of Poland.

20. The document assumes:

- the increase of GNP by 22 per cent;
- the inflation decrease to less that 10 per cent per year:
- the unemployment decrease.

21. Existing strategies and project prepared by the Ministries assume:

- changes leading to industrial production efficiency increase;
- implementation of the programme for the increase of the efficiency of energy use;
- rationalization of transportation and carriage system;
- directing agriculture to the improvement of product quality and forestry to forest husbandry;
- rationalization;
- implementation of water protection and use rationalization programme;
- implementation of the waste re-use programme.

The expected results of the assumed economic strategies in greenhouse gas emissions and sinks assessment in 2000

22. The forecast concerning the greenhouse gases emission, particularly carbon dioxide emissions, the most important because of its volume, indicate that in the year 2000 the emission of these gases should not exceed the 1988 level.

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